

# NASA TECH BRIEF



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## Tool Repairs Tube Components In Situ

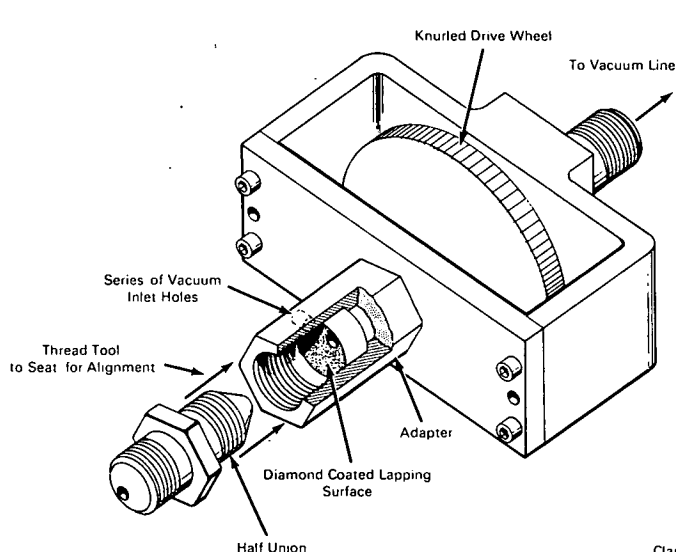


Fig. 1

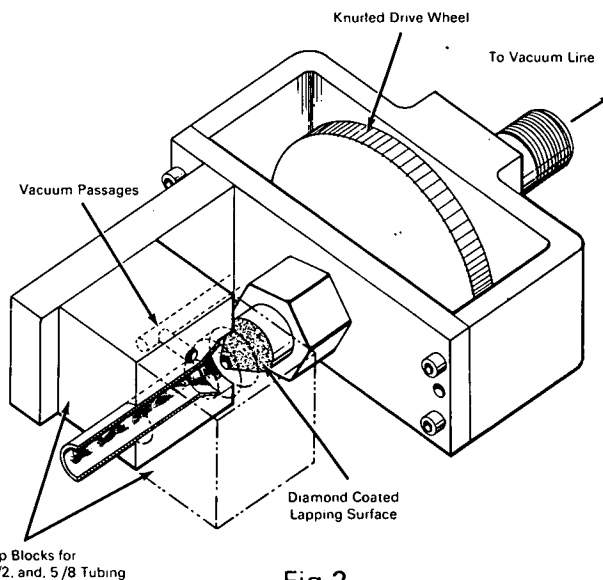


Fig. 2

A portable tool has been designed in two versions, one for repairing the seats of tube fittings (half unions) and the other for repairing the flared ends of tubing. Each version operates on a like principle, that of lapping to remove imperfections from tube and fitting interfacing surfaces.

The version used to lap the conical surface of a half union is shown in figure 1. The half union is screwed into the threaded end of the tool until it seats against the diamond-coated lapping surface. With the half union held against the lapping surface, the knurled drive wheel is rotated by hand until all imperfections have been removed from the conical surface that is to interface with a tube flare.

The tool version used to remove imperfections from the flares on tube ends is illustrated in figure 2. In

this case, clamp blocks are used to hold the flare against the diamond-coated lapping surface while the knurled drive wheel is rotated by hand to achieve the lapping action.

### Notes:

1. A variety of adapters for the half union lapping tool and clamp blocks for the flare lapping tool permit cleanup of numerous sizes.
2. Each tool version includes a vacuum system for continuous removal of debris generated during the lapping operation.
3. This Tech Brief is complete in itself. No additional information is available.

(continued overleaf)

**Patent status:**

No patent action is contemplated by NASA.

Source: Philip E. Tucker and Robert E. Rush of  
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